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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/894,675	06/28/2001	Lutz Melchior	IT-273	6394

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EXAMINER

WOOD, KEVIN S

ART UNIT PAPER NUMBER

2874

DATE MAILED: 12/27/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/894,675

Applicant(s)

MELCHIOR ET AL.

Examiner

Kevin S Wood

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 17-19, 24 and 26-28 is/are rejected.
- 7) ☒ Claim(s) 6-16, 20-23, 25 and 29 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 1.

- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: B. Heery

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1 and 17 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear what is meant by the term "behind" in each of these claims. The figures of the invention disclose the inclined end surfaces of the waveguide sections being adjacent to each other, not behind each other.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-5, 17, 19, 27, and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,456,329 to Henderson et al.

Referring to Claim 1, Henderson et al. discloses all of the limitations of the claimed invention. Henderson et al. discloses an optical device comprising: an optical waveguide (10,14) for carrying light of a plurality of optical data channels, the optical waveguide having an optical axis; and at least one optical component (12) that receives

light output from the optical waveguide; the optical waveguide forming at least two sections (10,14); the at least two optical waveguide sections including a first optical waveguide section (10) having an inclined end surface and a second optical waveguide section having an inclined end surface (14); the inclined surface of the first optical waveguide section being positioned along the optical axis and behind the inclined end surface of the second optical waveguide section; the inclined end surface of the second waveguide section configured to output light of one of the plurality of optical data channels from the optical waveguide at an angle relative to the optical axis.

Referring to Claim 2, Henderson et al. discloses all of the limitations of the claimed invention. Henderson et al. discloses a wavelength selective filter layer (16) between the inclined end surfaces of waveguide sections (10,14).

Referring to Claim 3, Henderson et al. discloses all of the limitations of the claimed invention. Henderson et al. discloses that the inclined end surface of the first optical waveguide and the inclined end surface of the second optical waveguide section are coplanar. See the figures of the reference.

Referring to Claim 4, Henderson et al. discloses all of the limitations of the claimed invention. Henderson et al. discloses that the inclined end surface of the first optical waveguide and the inclined end surface of the second optical waveguide section are coplanar.

Referring to Claim 5, Henderson et al. discloses all of the limitations of the claimed invention. Henderson et al. discloses that the inclined end surface of the first optical waveguide section and the inclined end surface of the second optical waveguide

section each form an angle of essentially 45 degrees with respect to the optical axis of the optical waveguide. See Col. 2, line 46.

Referring to Claim 17, Henderson et al. discloses all of the limitations of the claimed invention. Henderson et al. discloses an optical device comprising: a plurality of waveguide sections having inclined surfaces, the plurality of waveguide sections including the at least two waveguide sections; including a plurality of optical components (12, 12a) that each receive light output from the optical waveguide; the plurality of optical components being located one behind another; each one of the plurality of optical components being associated with an inclined surface selected from the group consisting of the inclined surfaces of the plurality of the waveguide sections. See Fig. 7.

Referring to Claim 19, Henderson et al. discloses all of the limitations of the claimed invention. Henderson et al. discloses an optical device comprising: an optical component (12a) that has an optical axis that is approximately parallel to the optical axis of the second optical waveguide section (14).

Referring to Claim 27, Henderson et al. discloses all of the limitations of the claimed invention. Henderson et al. discloses an optical device comprising: a plurality of wavelength selective layers that are selective for different wavelengths; the at least two waveguide sections defining a plurality of waveguide sections having a plurality of inclined end surfaces; and each one of the plurality of the different wavelength selective layers being associated with a respective one of the plurality of the optical data

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channels and being coated placed on one of the plurality of inclined end surfaces. See Fig. 7.

Referring to Claim 28, Henderson et al. discloses all of the limitations of the claimed invention. Henderson et al. discloses an optical device where the inclined end surface of the first optical waveguide section and the inclined end surface of the second optical waveguide section are adjacent and form a beam splitter.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,456,329 to Henderson et al. in view of U.S. Patent No. 4,339,290 to Winzer et al.

Referring to Claim 18, Henderson et al. discloses all of the limitations of the claimed invention, except Henderson et al. does not specifically disclose that the plurality of optical components are located along the optical axis. Winzer et al. discloses a similar device where the optical components are located along the optical axis for the purpose of allowing the unidirectional input and output coupling of a signal into a main line. See Fig. 15, along with col. 7, lines 7-16. Since Henderson et al. and Winzer et al. are both from the same field of endeavor, the purpose disclosed by Winzer et al. would have been recognized in the pertinent art of Henderson et al. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to arrange the device disclosed by Henderson et al. in the arrangement taught by Winzer et al. for the purpose of allowing the unidirectional input and output coupling of a signal into a main line.

8. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,456,329 to Henderson et al. in view of U.S. Patent No. 4,701,012 to Kaiser.

Referring to Claim 24, Henderson et al. discloses all of the limitations of the claimed invention, except Henderson et al. does not specifically disclose that coupling lens is located between the inclined surface and the of the second optical waveguide

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section and the optical component. Kaiser discloses a similar device where coupling lenses are located between the inclined surfaces (101-104) and the optical components (24-28), for the purpose of focusing the light beams onto the optical components. See Fig 1, along with col. 2, lines 55-58. Since Henderson et al. and Kaiser et al. are both from the same field of endeavor, the purpose disclosed by Kaiser et al. would have been recognized in the pertinent art of Henderson et al. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to place coupling lenses between the inclined surfaces and the optical components for the purpose of focusing the light beams onto the optical components.

9. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,456,329 to Henderson et al.

Referring to Claim 26, Henderson et al. discloses all of the limitations of the claimed invention, except Henderson et al. does not specifically disclose that the optical waveguide is a single mode waveguide. Single mode waveguides are commonly used to carry multiplexed optical signals. It would have been obvious to one having ordinary skill in the art at the time of the invention to use a single mode waveguide for the purpose of avoiding modal mode dispersion, modal noise, and other effects that come with multi-mode transmission

Allowable Subject Matter

10. Claims 6-16, 20-23, 25 and 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 4,576,436 to Daniel

U.S. Patent No. 6,307,987 to Wang et al.

U.S. Patent No. 6,055,099 to Webb

U.S Patent No. 4,630,255 to Gouali et al.

These references disclose similar devices beam splitters or filters to distribute light to various optical sources.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin S Wood whose telephone number is (703) 605-5296. The examiner can normally be reached on Monday-Thursday (7am - 5:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney B Bovernick can be reached on (703) 308-4819. The fax phone numbers for the organization where this application or proceeding is assigned are (703)

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872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 307-0956.

ksw
December 19, 2001

Bar Healy
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2001 Dec 19